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THE PLANT DISEASE REPORTER

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DUTCH ELM DISEASE FOUND IN THE UNITED STATES

The occurrence of the destructive Dutch elm disease in Ohio is reported by Curtis May of the Ohio Agricultural Experiment Station. (Dutch elm disease in Ohio. Science n.s. 72: 142-143. Aug. 8). The following notice is taken from the Official Record for September 4.

"The Dutch elm disease was found this summer for the first time in America, according to Dr. Haven Metcalf, in charge of the office of forest pathology, Bureau of Plant Industry. Curtis May, of the department of botany and plant pathology, Ohio Agricultural Experiment Station, Wooster, recently isolated Graphium ulmi, the fungus causing the disease, from four wilting American elms at Cleveland and from one at Cincinnati.

"Dr. Christine Buisman, a visiting plant pathologist from Holland, who worked for some years on the disease in Europe, also identified as Graphium ulmi the cultures she made from one of these trees. The office of forest pathology, Bureau of Plant Industry, is cooperating with the Ohio State authorities in identification work at Wooster and in scouting. So far no common center from which the disease has spread in this country has been found. Scouting for the Dutch elm disease presents many difficulties because of the wilting of elms from other causes.

"The Dutch elm disease was first observed in Holland in 1919, says Doctor Metcalf, and has since been found in England, France, Belgium, Germany, Austria, and Norway. The fungus (Graphium ulmi) causing the disease develops principally in the sapwood of affected parts of the tree. Wilting and dying of the leaves of one or more branches or of the entire tree, together with dark streaks in the sapwood, are the characteristic symptoms. The disease strikingly resembles the well-known Verticillium wilt of maple. Affected trees sometimes die quickly, but usually last for two or three years after the first wilting.

"Most of the species of American elms have proved susceptible to the disease in Europe.

"As State and Government funds for survey work on the Dutch elm disease are limited, the cooperation of all workers with trees will assist materially in determining its present distribution. Short sections of elm limbs that show wilting or dying of the leaves and dark streaks in the

sapwood should be sent to the department of botany and plant pathology, Agricultural Experiment Station, Wooster, Ohio, with a description of the diseased trees and their location."

FRUIT DISEASES

APPLE RUST DISEASES IN NEW YORK

In a letter dated August 27 H. E. Thomas makes the following statement:

"In recent collections of rust on apples from Essex County mostly by A. B. Burrell, fourteen of fifteen varieties bore some Gymnosporangium germinale. Only six showed G. juniperi-virginianae on fruits. G. globosum was more common on foliage than G. juniperi-virginianae. I hope you will grasp any opportunity to extend the range of these fungi on apple."

Information concerning the distribution and relative importance of these three rust species in other States will be appreciated.

OTHER REPORTS ON FRUIT DISEASES

Blight (Bacillus amylovorus) of apple in Missouri: In a letter to H. R. Rosen, County Agent H. W. Guengerich stated that blossom blight completely destroyed the Jonathan crop in about 75 per cent of the orchards in Jackson County. (Sept. 6)

Thread blight (Corticium stevensii) on pear in Florida: There appears to be a gradual spread of this trouble during the past few years. Has never appeared in epidemic form, nevertheless, it is destructive on infected trees annually. (G. F. Weber, Sept. 1)

Crown gall (Bacterium tumefaciens) on black raspberry in Ohio: A plantation of 500 Plum Farmer and Cumberland at Mt. Vernon is very badly affected with crown gall. (E. W. Mendenhall, Aug. 20)

DISEASES OF SPECIAL CROPS

REPORTS ON DISEASES OF COTTON IN TEXAS AND ARKANSAS

TEXAS

Root strangulation due to tight, packed soil brought about by early downpour of continuous rain, preventing cultivation and aeration of the soil. This is a new cotton trouble appearing in the heavy clay soils. It was found in Hidalgo, Falls, Wharton, Hardeman, Hill, Jasper, Milam, Ellis, and Bexar counties. The losses in individual fields this year ranged from 5 to 25 per cent. A description of cotton root strangulation will appear in the January number of Plant Physiology. (Taubenhaus and Ezekiel, Sept. 1)

Drought injury. The extremely dry weather throughout the State has seriously affected the cotton crop. In many fields a large number of plants are actually dying as a result of the drought, while in others the plants are shedding heavily both foliage and squares. Drought has so far reduced the cotton crop in Texas about 25 to 30 per cent. Cotton on the uplands is suffering more from the drought than cotton growing in first and second river bottom lands.

Root-rot (Phymatotrichum omnivorum). The dry weather has practically put a stop to any new spread of cotton root-rot. On the other hand, where cotton is growing under irrigation the disease continues to spread. This is particularly true with cotton growing in the lower Rio Grande Valley where rainfall has been heavy and where in addition cotton is grown under irrigation.

Wilt (Fusarium vasinfectum) has not been entirely checked by dry weather conditions, however, it has been causing very little damage, perhaps 1/10 of 1 per cent.

(J. J. Taubenhaus, Sept. 1, 1930)

ARKANSAS

Stub-root. A condition noted in previous years is rather prevalent this year in so-called "gumbo" soils in which the root system is undeveloped and consists mainly of a rounded knob or stub in place of the typical tap root. Apparently such plants have been unable to penetrate the hard pan which is a few inches below the surface and when the upper loose layer of soil dries out they die. As many as 25 per cent of the plants dead from this trouble have been noted.

Drought injury. Losses from dry weather especially severe in hill lands where much cotton is almost a complete failure. In bottom lands there is great variation - cultivation, addition of humus to soil and fertilization appear to have in many cases offset much of the effect of lack of rain.

Potash hunger or rust. Very prevalent in sandy soils and together with dry weather causing severe losses. Beneficial results of barnyard manure, potash fertilizers and deep plowing on potash hunger apparent in many fields.

Wilt caused by Fusarium vasinfectum. Apparently greatly reduced by the dry weather. Many plants showing some vascular discoloration have practically no other symptoms. Counts indicate that the incidence of wilt varies from less than 1 per cent to 41 per cent in fields examined.

Root knot (Caconema radicicola.). Apparently widespread in sandy soils. In one field with a heavy cotton wilt infection all wilted plants examined were also affected with root knot.

Angular leafspot (Bacterium malvacearum.) Almost completely absent.

Anthracnose (Glomerella gossypii). Not seen this year.

(V. H. Young)

A SUMMARY OF TOBACCO DISEASE SURVEY IN TENNESSEE, AUGUST 1930

By C. D. Sherbakoff and J. O. Andes

During the survey seventeen fields in eastern Tennessee and thirty-four fields in middle Tennessee were carefully examined and most of the data required by the outline were obtained. A partial examination was made of nineteen fields in eastern Tennessee and eighty-three fields in middle Tennessee. The results of the survey may be briefly stated as follows:

No disease, except mosaic, was found in any of the fields examined in middle Tennessee. In eastern Tennessee, with somewhat better rainfall than in middle Tennessee, besides mosaic were found angular leaf spot (Bact. angulatum) (from a trace to 1.5 per cent) and wildfire (Bact.tabacum) (in a conspicuous form in one field, irrigated early in the season.) Ring spot in eastern Tennessee was observed in many fields. The number of plants affected was usually very small, from one to three, but in one field there were as many as 50 plants showing ring-spot.

In the territory covered by the survey there was no definite black root rot (Thielaviopsis basicola) found; however, the writer is certain (on the basis of specimens examined) that the disease is serious in some fields of Greene and Campbell Counties.

Due to the continuously dry weather this year, the results of the survey should not be considered as representing the conditions of an average season.

TOBACCO DISEASES IN KENTUCKY

W. D. Valleau contributes an interesting report on the occurrence of tobacco diseases in Kentucky (Sept. 1).

Sunscald (non-par.). During the early portion of the excessively hot dry period in July extensive injury was done to Burley tobacco as a result of excessive wilting. Usually damage was worse on early tobacco which had grown rapidly. A single leaf, near the growing point, usually about half grown, wilted more severely than the other leaves. Some portions wilted so severely as to be unable to recover. This resulted the following day in bluish green areas between the secondary veins and extending to the mid-vein. These areas then turned brown. Usually the veins were not killed although sometimes the entire outer portion of the leaf was killed. The remainder of the leaf usually recovered. Occasionally two or three injured leaves might be found on a plant, injury to each leaf having occurred at a different time. The same type of injury is commonly attributed to one of the stink bugs, but in the cases observed wilting from excessive heat and drought appeared to be the direct cause.

Mosaic (virus) was present in the usual amounts early in the season. As usual there was little difficulty in associating severe outbreaks of it with the use of "natural leaf" chewing or smoking tobacco. Due to the fact that much of the tobacco was cut directly after topping and before any suckering was done the spread of mosaic was probably much less than usual. Practically no mosaic burning has been seen in the drought-affected tobacco.

Other virus diseases than true tobacco mosaic have appeared to be less abundant than usual on farms where they have previously been found, with the exception of vein-banding (the virus which causes rugose mosaic when associated with the healthy potato virus) and ring spot. In one field vein-banding was

present in 30 per cent of the plants, ruining as high as 50 per cent in parts of the field. This was on a farm where Cobbler potatoes are regularly grown. Whether infection came directly from potatoes or from weeds was not determined but from its distribution it appears very likely that weeds were the source. While the disease is not of importance to tobacco, its presence in tobacco where potatoes have been grown in previous years is of importance to the potato industry as it indicates weed infection with a potato virus.

Brown root rot(undet.) No cases of brown root-rot have been seen this year. It appears to be associated with weather conditions at and following setting. Varieties which, in former years, have shown marked contrast in the degree of wilting during hot periods have shown no difference this year.

Frenching (non-par.) has been reported to the experiment station but once this year and is extremely rare in the State, due apparently to the dry season. On limed soils where it has been abundant in normal seasons it is entirely absent this year.

Bacterial leaf spots. The bacterial leaf spots have been of no importance this year. One case of what appeared to be typical angular leaf spot (Bact. angulatum) was seen in West Christian County in rapidly growing dark tobacco in a low area which had not beenaffected by the drought, but no other cases have been seen.

Black root rot (Thielaviopsis basicola) has been present as usual but was particularly severe in some fields where, due to the very early season, tobacco was set as much as two weeks earlier than usual. Under these conditions the moderately resistant selections made directly from the commonly grown Burley varieties proved susceptible and, where affected early, have not yet recovered due to the excessive drought. Hybrid Burleys of a higher degree of resistance have been satisfactory in diseased soil, although they are not immune. One of these has been extensively tested this year and will probably prove satisfactory as it has a fairly high degree of resistance and is identical in type with the commonly grown stand-up varieties.

DISEASES OF VEGETABLE CROPS

RINGSPOT (VIRUS) ON CANTALOUPE IN VIRGINIA

On August 6 I observed a field of cantaloupe (about 1 acre) in Prince Edward County that ha 30 to 40 per cent of the plants infected with ringspot. Inoculation of healthy tobacco plants growing in the greenhouse with juice expressed from diseased cantaloupe leaves has produced symptoms identical with that of tobacco ringspot. The field was located near tobacco which also had a high percentage of ringspot infection. (R. G. Henderson, Aug. 26)

DODDER ON CANTALOUPE

M. B. Waite found Cuscuta arvensis attacking cantaloupe on a farm at Glenburnie, Maryland, August 12. Three hills of the melons were ruined.

VEGETABLE DISEASES REPORTED FROM FLORIDA

The following quotations include some of the most interesting notes from a report by G. F. Weber (September 1)

CUCUMBER

Snakehead, probably due to mechanical injury to seed. Quite prevalent in certain fields resulting in the loss of a large number of plants. Seems to be associated with certain shipments of seed.

Mosaic (virus). Not so prevalent in the central and northern sections as during the previous season. In certain fields the loss was 5 per cent in plants while others were entirely free from the disease. As a general thing the disease is on the increase in the State.

Anthracnose (Colletotrichum lagenarium). Scattered over the whole State but probably less than during previous seasons. This disease is not generally destructive on average years, however, in local places it may destroy the entire crop.

Downy mildew (Pseudoperonospora cubensis) was widespread and destructive during the past season. The picking season in the south and central portions was cut short by half and in the northern sections about one-third. This trouble is usally considered the controlling factor in production in the State. It always appears but destructiveness varies with the weather.

Powdery mildew (Erysiphe cichoracearum). Cucumbers are usually subject to this disease during the latter part of the productive season. Last season it was not a factor in the State and was not the cause of any loss.

Angular leaf spot and fruit rot (Bacterium lachrymans). This disease was not so prevalent this year as during the previous several seasons. It was found widely scattered and in local fields destructive. Several fields were saved by pulling infected seedlings in the two-leaf stage followed by a thorough spraying. The loss in transit from fruit infection is the most important phase of the problem to the Florida grower.

CANTALOUPE

Downy mildew (Pseudoperonospora cubensis) was destructive during the past season and an important factor in production. Generally State wide.

Leaf blight (Macrosporium cucumerinum). Common and destructive during the past season, almost as important as Downy mildew on this host.

SUMMER SQUASH

Powdery mildew (Erysiphe cichoracearum). Well distrubuted wherever the host is grown. Bad during past season, being most destructive in the late spring and early summer.

CITRON

Downy mildew (Pseudoperonospora cubensis). Common on wild or volunteer citron plants growing in waste places and along roadsides during the summer months. Important mainly as a source of infection for fall cucumbers and other cucurbits.

PEPPER

Blossom-end rot (non-par.) This trouble causes at least 50 per cent of the damage to Florida peppers. The spots appear on the fruit and as soon as the chlorophyll disappears secondary organisms establish themselves, both parasites and saprophytes. Generally found and destuctive.

Bacterial spot (Bact. vesicatorium). Severe in certain localities during the past year. Usually appears in certain sections of the State but as a whole not especially severe.

Anthracnose (Glomerella cingulata). Found in all fields, especially on the fruit that is ripening. Most common on Ruby Kings and Pimentos.

Mould (Blakeslea trispora). Collected on fruits probably following blossom end rot but apparently assuming parasitic role following entrance.

Leafspot (Cercospora capsici). This disease has been relatively bad during the past season especially on the summer crop.

Leafspot (Stemphylium solani). Common on pepper causing considerable defoliation and stem and peduncle lesions.

Twig blight (Sclerotinia sclerotiorum). Found attacking the branches from the tips and working several inches down the plant. A twenty acre field showed 30 per cent infection. Certain plants were killed.

Southern blight (Sclerotium rolfsii). Not so destructive as during previous seasons although common weather conditions apparently affected its spread.

Mosaic (virus). Found in almost every pepper field, worse as the season progresses.

DISEASES OF CEREAL CROPS

SOME REPORTS ON CORN DISEASES IN FLORIDA

In addition to the diseases reported in the following notes, A. H. Eddins mentioned smut (Ustilago zeae), rust (Puccinia sorghi), and yellow ear mold (Aspergillus flavus) as occurring this year but causing little damage.

Leaf blight (Helminthosporium turcicum). Very severe this season on all varieties of corn grown on the Experiment Station farm. Very few plants escaped infection. The disease made its appearance in later stages of growth of the crop and in some cases caused premature death of plants.

Ophiobolus leaf spot (Ophiobolus heterostrophus). Not as common and destructive as Helminthosporium leaf blight; however, the disease was quite prevalent.

Brown spot (Physoderma zeae-maydis). Approximately 50 per cent of the plants in 25 varieties of corn grown in a yield test plot at Gainesville were infected with brown spot. Maximum infection was noted on July 11.

Diplodia dryrot (Diplodia zeae, D. macrospora, and D. frumenti). These fungi have resulted in about 5 per cent loss of the crop. Most of the damage was caused by Diplodia zeae.

Fusarium rot caused by Fusarium moniliforme and Fusarium spp. This disease was well distributed in the State. Ear infection was very common. Total loss will amount to about 5 per cent of the crop.

SOME SPECIMENS RECEIVED

Pestalozzia uvicola Speg, on leaf and fruits of grape, Amherst, Mass., W. H. Davis. This seems to be the first report for Massachusetts. Only the Brighton variety was attacked. Five other kinds growing within 50 feet were not infected. On affected plants the loss was 50 per cent.

Claviceps microcephala (Wallr.) Karst. on Poa pratensis and Agrostis palustris, Mower County, Mich., J. R. Kienholz. This seems to be the first record for Michigan on bluegrass. Apparently there is no previous report of this fungus on redtop.

Botrytis(vulgaris) on Lupinus polyphyllus, Amherst, Mass., W. H. Davis. Killed two plants. First report for State.

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The following were received through the Plant Quarantine and Control Administration of the Federal Horticultural Board.

Gymnosporangium globosum Farl. on Crataegus tanacetifolia, Locust Valley, L. I., W. S. Fields, Aug. 30. All of the Crataegus plants of all kinds on the estate were heavily infected. Det. R. W. Davidson who states that this seems to be the first report for this species of Crataegus.

Gymnosporangium gracilens (Pk.) Kern & Bethel on Juniperus sp., Santa Catalina Mountains, Arizona, R. F. Wilbur, June 1, 1930. Det. R. W. Davidson.